

ABSTRACT OF THE DISCLOSURE

There is provided by this invention an improved rf power control method for plasma applications for optimization of the feedback control voltage in the presence of harmonic and non-harmonic spurious frequencies. In this system, an oscillator and mixer, similar to those normally used in radio receiver applications are placed at the sampled output of the solid state rf signal source used for plasma ignition. The sampled output is mixed to a low frequency and filtered to remove the spurious frequencies that is created in the non-linear plasma. In this way, the feedback power control essentially ignores the spurious frequencies. In this application, the oscillator and mixer do not interfere with other desirable system characteristics and effectively isolate the feedback control voltage from changes in plasma spurious content. This allows rf power to be delivered to the Plasma with greater accuracy than would otherwise be possible with conventional power control methods.